

July 29, 2014

Mr. Alex DeSmidt
Rapid City Parks and Recreation
515 West Boulevard
Rapid City, SD 57701

RE: Proposal for Rapid Creek/Bike Path Repairs at Various Locations

Dear Alex:

Ferber Engineering Company is pleased to present you with this proposal to complete a range of professional services across town associated with the bike path. This proposal is broken out into the four (4) specific areas that we discussed. The projects are broken out so that the Parks Department can select all or particular projects within the overall final project scope dependent upon the department's budget. We have attached Exhibit A, B and C for your use in preparing a City contract.

The proposed projects are located at either end of the City. Each of the projects is outlined below with a narrative of the work that must be completed. The estimated fees to perform the work for each of the projects is provided at the end of each project description. Figure 1 shows the locations of Projects 1 and 2; Figure 2 shows the locations of Projects 3 and 4.

Project 1 – Cambell Street Bank Stabilization

Project 1 is a bank stabilization project on the east side of Billion Auto where the bike path turns directly south from Rapid Creek. It appears that debris in the creek just upstream of the bike path bend has caused Rapid Creek low flows to be directed into the south bank of the channel causing substantial bank erosion at and under the bike path, as shown below. The Parks Department has had to close the



bikepath at this location and route pedestrian and bicycle traffic into the grass around the south side of the closure. In addition, the Parks Department is not aware of a pedestrian easement across both Tract 5 of Bradsky #2 Subdivision and Lot 3 of NW1/4SW1/4 both located in Section 5, T1N, R8E, BHM.

The proposed scope of work for Project 1 includes the following items:

- legal courthouse research to pull plats, deeds, easements, etc
- legal survey sufficient to prepare temporary and permanent easements
- topographic survey of the bank stabilization area as well as a 50-foot wide corridor extending north from the City property south of the site (for construction access)
 - includes four Rapid Creek cross sections within the stabilization area
- design of the bank stabilization infrastructure utilizing gabion baskets
- simple normal depth comparison between existing channel and proposed improvements
- plans preparation inclusive of construction notes, horizontal and vertical project layout, project-specific details, standard City details and an erosion and sediment control plan
- engineer's opinion of probable construction cost
- two (2) temporary construction easement exhibits
- two (2) permanent pedestrian access easement exhibits
- preparation and submittal of a Rapid City Floodplain Development Permit application including a No-Rise Certification
- preparation and submittal of a United States Army Corps of Engineers (USACE) Department of the Army Section 404 permit application

As we discussed in the field, the probable bank stabilization will include the construction of gabions under the existing bike path and then construction a reinforced concrete bike path over top of the gabions. As shown in the picture, although there will be water to contend with during construction, the installation can be done using the existing bank, albeit reinforced on the back side, as a cofferdam. Final stabilization will include placement of large diameter riprap possibly extending above the level of the bike path to protect pedestrians/bicyclists from falling off of the edge. Determination of the need for and the preparation of designs and specifications for railing(s) are specifically excluded from our scope of services.

We will prepare temporary construction and permanent pedestrian easement exhibits for the project. Once we have them complete, we will submit to you for the City Attorney to develop the easement text. It will be the City's responsibility to obtain the signature(s) of the owner(s) and take the easement through the Public Works Committee and City Council procedure. The City Finance office will file the easements.

Our estimated fee to complete Project 1 is \$8,525.00. If we encounter work outside of the scope of work outlined above, we will not complete additional work without prior written authorization from the Rapid City Parks and Recreation Department. Any authorized out-of-scope work will be completed in accordance with our 2014 Schedule of Charges (attached).

Project 2 – Fairgrounds Bank Stabilization

Project 2 is located on City property (Lot B Revised of Tract 32 in Section 6, T1N, R8E, BHM) along the east bank of Rapid Creek west of the Central States Fairgrounds south of Center Street. Project 2 is a similar bank stabilization to that outlined in Project 1. A rock bar located just upstream of the impacted area appears to split the Rapid Creek flows with the eastern flowpath directed into the bank. As erosion of the bank has occurred small eddies have developed that continue to erode the bank. The erosion face has yet to reach the bike path, but given that higher flows are being released from Pactola Reservoir this year, it may not be much longer until more substantial repairs are needed.



For Project 2, the same type of repair as recommended for Project 2 will likely be used. The bike path will be removed, the remaining bank will be used as a partial cofferdam, limestone filled gabions will be constructed under the bike path and the surfacing will be reconstructed.

The proposed scope of work for Project 2 includes the following items:

- topographic survey of the bank stabilization area as well as the left overbank area between the creek and Lacrosse Street (for construction access and materials staging)
 - includes four Rapid Creek cross sections within the stabilization area
- design of the bank stabilization infrastructure utilizing gabion baskets
- simple normal depth comparison between existing channel and proposed improvements
- plans preparation inclusive of construction notes, horizontal and vertical project layout, project-specific details, standard City details and an erosion and sediment control plan
- engineer's opinion of probable construction cost
- preparation and submittal of a Rapid City Floodplain Development Permit application including a No-Rise Certification
- preparation and submittal of a United States Army Corps of Engineers (USACE) Department of the Army Section 404 permit application

Our estimated fee to complete Project 2 is \$6,900.00. If we encounter work outside of the scope of work outlined above, we will not complete additional work without prior written authorization from the Rapid City Parks and Recreation Department. Any authorized out-of-scope work will be completed in accordance with our 2014 Schedule of Charges (attached).

Project 3 – Cleghorn Hatchery Pedestrian Easement

The current City bike path extends from east of Project 1 and continues west through Rapid City to Cleghorn Canyon. From Chapel Lane to Cleghorn Canyon, the bike path runs next to and parallel to the north bank of Rapid Creek across Lot 3 of Fish Hatchery Subdivision in Section 8, T1N, R7E, BHM. Lot 3 is owned by the South Dakota Game, Fish and Parks. It was originally conveyed to the SDGFP by the City in 1950 as part of Lot R of Fish Hatchery Subdivision. Within the same document, the City maintained a right-of-way for public utilities. There is no mention of use for public access. Figure 2 shows the Project 3 location.

In 2010, FEC platted Lots 1, 2 and 3 of the Fish Hatchery Subdivision for the SDGFP and the City. The platting was completed so that the City could purchase 4.3 acres from the SDGFP for construction of the Jackson Springs Raw Water Pump Station and associated facilities. Within that project, we completed significant courthouse research and did not find any pedestrian access easements across current day Lot 3.

In 2009, FEC completed detailed topographic survey of the entire Highway 44 right-of-way and all property north of Rapid Creek and south of Highway 44 from Chapel Lane to Cleghorn Canyon. We have the total length of the bike path shot through the project area, so we do not believe that there is any additional field work that needs to be completed.

The proposed scope of work for Project 3 includes the following items:

- courthouse research to collect filed documents from 2010 through current day to make sure that correct ownership
- prepare a permanent pedestrian easement exhibit

We will prepare a permanent pedestrian easement exhibit centered on the existing bike path. The City Attorney will need to draft the easement exhibit language. Once complete, the easement will need to be signed by Tony Leif, Wildlife Division Director or Department Secretary Jeff Vonk. Once returned to the City, it must go through the Public Works Committee and the City Council, receive the mayor's signature and then filed with the Pennington County Register of Deeds. We have assumed that once completed with the easement exhibit (and any necessary revisions) our portion of Project 3 is complete.

Our estimated fee to complete Project 3 is \$1,500.00. If we encounter work outside of the scope of work outlined above, we will not complete additional work without prior written authorization from the Rapid City Parks and Recreation Department. Any authorized out-of-scope work will be completed in accordance with our 2014 Schedule of Charges (attached).

Project 4 – Cliffside Park Bank Stabilization

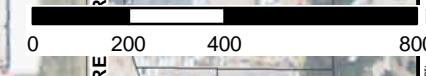
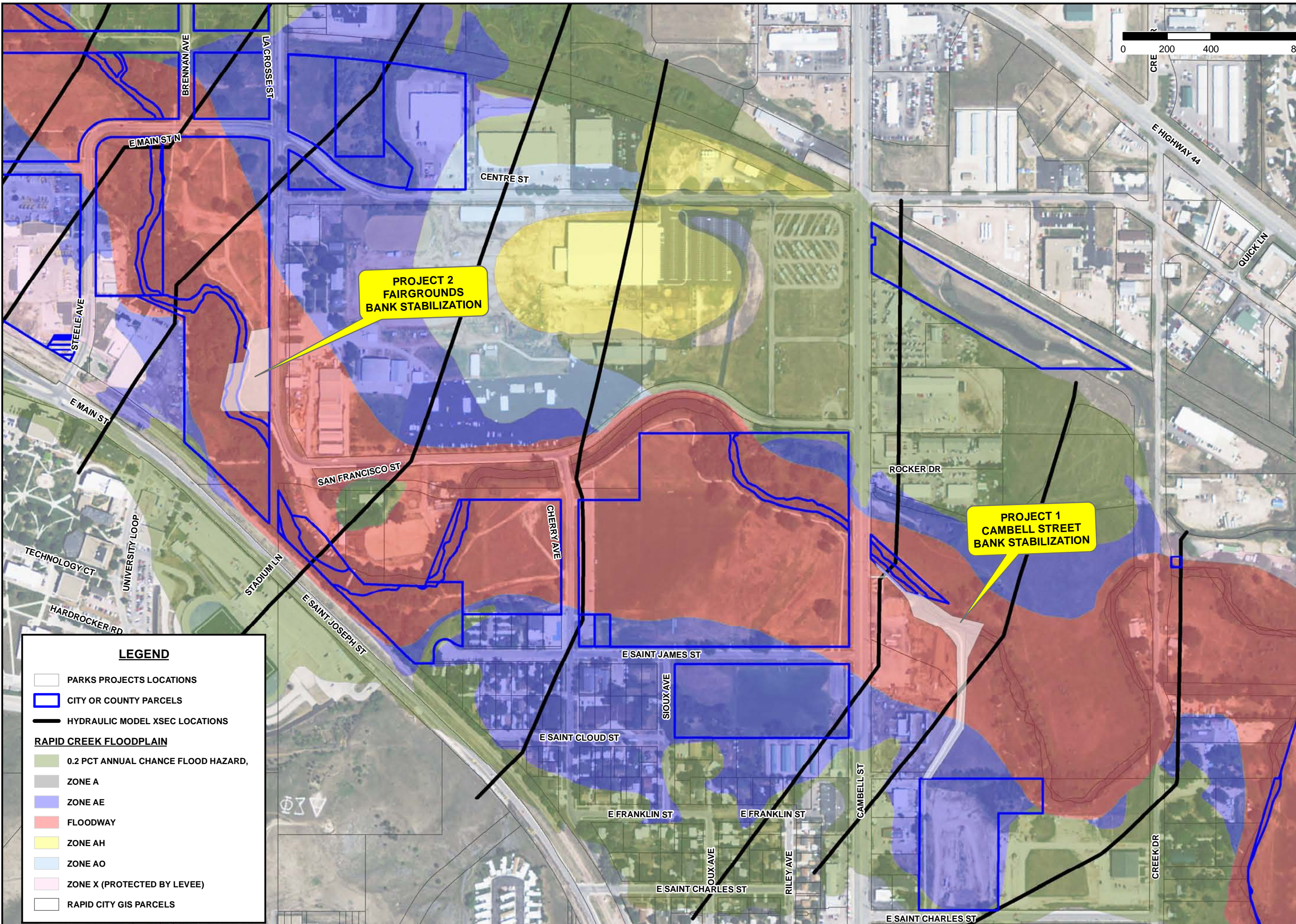
Project 4 is located above Cleghorn Canyon and downstream of Dark Canyon adjacent to the north side of Highway 44 and is inside of City property. Cliffside Park has a small parking lot and an internal sidewalk system leading to landings at its terminus points. These concrete landings are directly adjacent to the south bank line of Rapid Creek and provide venues to view the creek. A portion of the sidewalk to the east of the parking lot has experienced a failure associated with bank failure. It appears that the bank failure is associated with eddy currents from redirected flow created by a makeshift rock dam constructed by the general public. The belief is that the dam was constructed to create an upstream pool during times of low flow in Rapid Creek.



The Parks Department has temporarily stabilized the erosion with medium-sized limestone riprap and repaired the missing sidewalk using aggregate base course. In addition to permanent repair of the sidewalk failure, the City has requested the investigation of providing an ADA-accessible landing near the water's edge to replace the east landing.

The proposed scope of work for Project 4 includes the following items:

- topographic survey of the east end of the park from Highway 44 to Rapid Creek. The data will be collected in order to evaluate ADA-accessible alternatives and determine staging areas outside of the floodway.
 - includes four Rapid Creek cross sections within the proposed stabilization area
- design of the bank stabilization utilizing gabion baskets and the ADA-accessible creek landing and cutslope protection
- simple normal depth comparison between existing channel and proposed improvements
- plans preparation inclusive of construction notes, horizontal and vertical project layout, project-specific details, standard City details and an erosion and sediment control plan
- engineer's opinion of probable construction cost
- preparation and submittal of a Rapid City Floodplain Development Permit application including a No-Rise Certification
- preparation and submittal of a United States Army Corps of Engineers (USACE) Department of the Army Section 404 permit application



Prepared For:
Ferber Engineering Company, Inc.
 Civil Engineering • Water Resources • Transportation • Land Surveying • GIS
 779 East Watertown St., Rapid City, SD 57701 • Phone: (605) 343-3311



LEGEND

- PARKS PROJECTS LOCATIONS
- CITY OR COUNTY PARCELS
- HYDRAULIC MODEL XSEC LOCATIONS

RAPID CREEK FLOODPLAIN

- 0.2 PCT ANNUAL CHANCE FLOOD HAZARD,
- ZONE A
- ZONE AE
- FLOODWAY
- ZONE AH
- ZONE AO
- ZONE X (PROTECTED BY LEVEE)
- RAPID CITY GIS PARCELS

RAPID CITY PARKS AND RECREATION DEPARTMENT
 RAPID CREEK/BIKE PATH REPAIRS PROPOSAL
 Project No. _____
 RAPID CITY, SD

Sheet Title:
FIGURE 1.
 EAST SIDE
 PROJECT
 LOCATIONS
 Sheet: _____

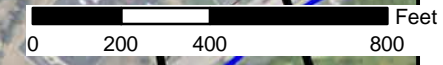
Date: 7/28/2014 File: P:\Proposals\2014 Proposals\CORC\Parks Bank Stabilization\1117_FOR Parks Proposal.mxd

LEGEND

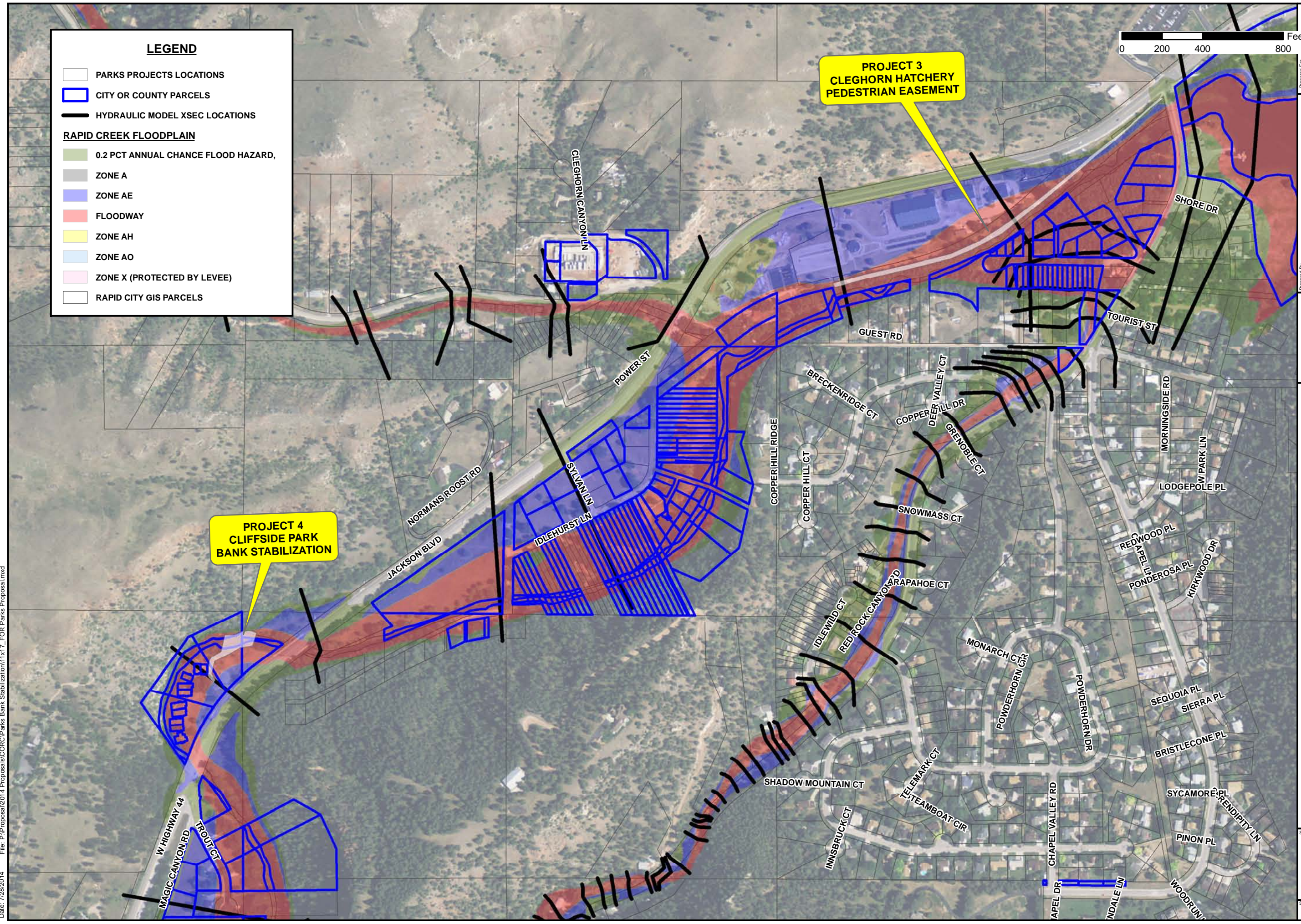
- PARKS PROJECTS LOCATIONS
- CITY OR COUNTY PARCELS
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RAPID CREEK FLOODPLAIN

- 0.2 PCT ANNUAL CHANCE FLOOD HAZARD,
- ZONE A
- ZONE AE
- FLOODWAY
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- RAPID CITY GIS PARCELS



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RAPID CITY PARKS AND RECREATION DEPARTMENT
 RAPID CREEK/BIKE PATH REPAIRS PROPOSAL
 Project No. _____
 Sheet Title: **FIGURE 2.**
WEST SIDE
PROJECT
LOCATIONS
 Sheet: _____